

Customer No. 24498  
Attorney Docket No. PU020105  
Office Action Date: February 27, 2009

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**Remarks/Arguments**

Claims 1-24 are pending in this application, and are rejected in the Office Action of February 27, 2009. Claims 1, 7, 13, 14, 21 and 23 are amended herein to more particularly point out and distinctly claim the subject matter Applicants regard as their invention.

**Re: Claims 1, 7 and 14**

Claims 1, 7 and 14 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Publication No. 2002/0087973 by Hamilton et al. (hereinafter, "Hamilton"). Applicants respectfully traverse this rejection for at least the following reasons.

At the outset, Applicants again note that the present invention addresses and solves the problem that in a digital television system, in order to perform a channel change, the receiver must first wait to receive program specific information that is received via the incoming data stream before programming associated with a newly selected channel can be decoded and displayed. The program specific information must be extracted, and elements of the receiver must be configured based on this information in order to receive desired channel and begin decoding. The program specific information may include for example, program association table data, and program map table data (see page 1, line 31 to page 2, line 8; page 5, lines 24 to 28 of Applicants' specification). Additionally, the incoming data stream also includes decoder synchronization data (e.g., sequence headers) that must be acquired before decoding can begin (see page 6, lines 12 to 13 of Applicants' specification). The delay in acquiring the necessary program specific information and decoder synchronization data may cause a delay in changing from one channel to another.

The present invention addresses and solves this problem by providing for the initiation of a data caching operation in response to a channel change event. The caching operation enables incoming decoder synchronization data (e.g., sequence header data) to be cached so that it may be found quickly after the program association table data and program map table data is captured and processed (see page 6, lines 26-32 of Applicants' specification). Thus, a notable aspect of the claimed invention is

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that the caching operation is initiated in response to receiving a channel change command, and the cached data stream includes decoder synchronization data (e.g., sequence header data).

In that regard, independent claim 1, as amended herein, recites:

"receiving a channel change command;  
initiating caching of an incoming data stream associated with a newly selected channel in response to the channel change command, the cached data stream including **decoder synchronization data**;  
finding program specific information included within the incoming data stream;  
transferring the cached data stream for decoding in response to the program specific information; and  
finding the decoder synchronization data within the cached data stream." (emphasis added)

Independent claims 7 and 14 are amended herein to recite features similar to claim 1 above. Applicants submit that Hamilton fails to disclose or suggest, *inter alia*, the claimed feature of initiating caching of an incoming data stream and thereby caching **decoder synchronization data** in response to a channel change command, as provided by independent claims 1, 7 and 14.

Hamilton's failure to disclose or suggest the aforementioned feature is not surprising given that Hamilton is in no way interested in reducing channel change time delays (as the claimed invention is). Rather, Hamilton's purported objective is to insert local signals during channel changes. As such, Hamilton expressly states that his invention is expected to increase channel change time delays (see, for example, the Abstract, particularly, the second and last sentences thereof).

On page 2 of the Office Action dated February 27, 2009, the Examiner alleges that the claimed feature of "initiating caching of an incoming data stream associated with a newly selected channel in response to the channel change command" is disclosed by paragraph [0006] of Hamilton, which states:

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"With reference to FIG. 3, the transport demultiplexor, or Demux, monitors the transport stream to establish packet boundaries so that the data fields may be processed. Then, based on instructions from one or more resident or host applications (e.g., a channel change command), the demultiplexor filters the packets from the incoming transport stream into the video and audio streams for a given program, and also extracts the system data. The audio and video compressed data streams are then sent to the audio and video decoders, respectively. The system information is sent to the processor memory for use by the host application in constructing navigation tables, conditional access information, and other applications such as electronic program guides." (emphasis added)

As indicated above, Hamilton discloses that, in the event of a channel change command, (i) audio and video compressed data streams for a given program are sent to audio and video decoders, respectively, and (ii) "system information" is sent to a processor memory. Applicants assume it is this "system information" sent to the processor memory in Hamilton that allegedly corresponds to the claimed feature of "initiating caching of an incoming data stream associated with a newly selected channel in response to the channel change command" in independent claim 1.

In response, Applicants note that independent claim 1 is amended herein to clarify that "decoder synchronization data" is included in the "cached data stream". Independent claims 7 and 14 are amended herein in a similar manner. Applicants further submit that Hamilton clearly fails to disclose or suggest, *inter alia*, that "decoder synchronization data" is included in the "system information" sent to the processor memory. In fact, paragraph [0007] of Hamilton expressly teaches that "[decoder] synchronization data" is sent with the audio and video compressed data streams to the audio and video decoders (and not to the processor memory) as follows:

"The video and audio decoders function similarly. Each accepts the appropriate compressed video or audio data stream from the Demux, processes the stream (e.g., removes overhead such as control and synchronization data), and then decodes the data to reconstruct the digital video and audio data. Utilizing the timing information in the packet header, the uncompressed samples are forwarded to a digital-to-analog converter for playback through the television."

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As indicated above, Hamilton clearly teaches that "[decoder] synchronization data" is sent with the audio and video compressed data streams to the audio and video decoders. Accordingly, such "[decoder] synchronization data" of Hamilton is clearly not part of the "system information" sent to the processor memory. In this manner, Hamilton clearly fails to disclose or suggest, *inter alia*, the claimed feature of "initiating caching of an incoming data stream associated with a newly selected channel in response to the channel change command, the cached data stream including decoder synchronization data" (emphasis added), as recited for example by amended independent claim 1 (and similarly recited by amended independent claims 7 and 14).

Accordingly, given that Hamilton fails to disclose or suggest at least one notable feature of independent claims 1, 7 and 14, Applicants submit that such claims are patentable over Hamilton, and withdrawal of the rejection is respectfully requested.

#### **Re: Claims 21-24**

Claims 21-24 are rejected under 35 U.S.C. §102(e) as being unpatentable over U.S. Patent No. 6,728,965 issued to Mao (hereinafter, "Mao"). Applicants respectfully traverse this rejection for at least the following reasons.

Independent claims 21 and 23 are amended herein to recite features similar to independent claims 1, 7 and 14 described above. Applicants submit that Mao fails to disclose or suggest, *inter alia*, the claimed feature of initiating caching of an incoming data stream associated with a newly selected channel in response to a channel change command, as provided by independent claims 21 and 23.

On page 3 of the Office Action dated February 27, 2009, the Examiner specifically alleges that the aforementioned feature is disclosed on column 7, lines 8-25 of Mao. Applicants respectfully disagree. In particular, Applicants note that column 7, lines 8-25 of Mao state:

"After receiving the request from a subscriber to change to a new channel, the BDT 12 must then wait for the Group of Picture (GOP) start

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point of the requested channel. Even if the ATM system is dedicated strictly to video, the time between GOP start points is significant. As illustrated in FIG. 4, the time delay between  $GOP_{B1}$  and  $GOP_{B2}$  may be 1/2 second or more depending on the compression scheme and other factors.

After the BDT 12 synchronizes with the appropriate GOP start point, it can then decompress the requested signal and direct it to the subscriber(s) who have requested it. The signal corresponding to the requested channels is then multiplexed with the signals corresponding to the requested channel of all other subscribers handled by that BDT 12. The multiplexed signal is then transmitted downstream to BNU 14, where the signal is demuxed and directed to the appropriate set-top units 19."

As indicated above, the cited passage of Mao nowhere teaches or suggests, *inter alia*, a method in which a caching operation is initiated in response to a channel change command, as claimed. Rather, this passage of Mao, read in the context of the entire reference, simply confirms that Mao expressly teaches a method in which the caching of an incoming datastream is initiated before a channel change command is ever received (see column 8, lines 52-55 of Mao, and Applicants' previous response) and ostensibly teaches a method in which an incoming datastream is continuously cached and output on a first-in, first-out basis (see column 8, lines 14-51 of Mao, and Applicants' previous response).

Accordingly, given that Mao fails to disclose or suggest at least one notable feature of independent claims 21 and 23, Applicants submit that such claims, and those claims that depend thereon, are patentable over Mao, and withdrawal of the rejection is respectfully requested.

**Re: Claims 2-6, 8-13 and 15-20**

Claims 2-6, 8-13 and 15-20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Hamilton in view of U.S. Patent No. 6,490,001 issued to Shintani et al. (hereinafter, "Shintani"). Applicants respectfully traverse this rejection for at least the same reasons pointed out above in conjunction with independent claims 1, 7 and 14 (from which claims 2-6, 8-13 and 15-20 ultimately depend) since Shintani is unable to

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remedy the deficiencies of Hamilton. Accordingly, withdrawal of the rejection is respectfully requested.

**Re: Claims 5, 11 and 18**

Claims 5, 11 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Hamilton in view of U.S. Patent Publication No. 2002/0087973 by Moriyama (hereinafter, "Moriyama"). Applicants respectfully traverse this rejection for at least the same reasons pointed out above in conjunction with independent claims 1, 7 and 14 (from which claims 5, 11 and 18 ultimately depend) since Moriyama is unable to remedy the deficiencies of Hamilton.

**Conclusion**

In view of the foregoing remarks/arguments and amendments, the Applicants believe this application stands in condition for allowance. Accordingly, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the Applicants' attorney at (609) 734-6815, so that a mutually convenient date and time for a telephonic interview may be scheduled. No fee is believed due from this response. However, if a fee is due, please charge the fee to Deposit Account 07-0832.

Respectfully submitted,



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